



Table 3A and 3B commentary

This document should be read in conjunction with tables 3A – Outcomes performance and 3B – Sub-measure performance.

1.0 Introduction

This commentary focuses on our 2018/19 performance. Further commentary on our plans for 2019/20 is included in the reconciliation submission commentary. This commentary includes:

- How the information reported in table 3A relates to the information on outcomes; performance that we publish and report to our customer challenge group and customers more generally (Regulatory Accounting Guideline (RAG) 3.11);
- Any assumptions that have been made while filling in the tables in accordance with RAG 4.08;
- Where forecasting an under-performance payment is not appropriate for a particular performance commitment (RAG 3.11);
- The reasons for changes in performance;
- Changes or proposed changes to methodologies; and
- Changes in previously reported numbers and the reasons for the change.

2.0 Reporting of outcome performance to our customer challenge group and customers

We report progress against our performance commitments and outcome delivery incentives (ODIs) to our customer challenge group on a quarterly basis, along with commentary that describes the root causes and mitigating actions that are required when performance is not on track. Our performance is also reported to our customers on an annual basis within our annual performance report.

3.0 Table 3A – Outcome performance

WA4 - Reduced water consumption from issuing water efficiency devices to customers

2018/19	2017/18	2016/17	2015/16
28.25 MI/d	20.22 MI/d	n/a MI/d	n/a MI/d

This measure has an end of AMP target. The 2018/19 figure is reported cumulatively from the beginning of the AMP and is based on an assumed savings methodology.

At the end of 2018/19 we have already outperformed our end of AMP target by 83% due to completing a higher number of water efficiency visits to customers. During these visits, customers



are offered the installation of water efficiency devices, internal plumbing fixes to reduce “wastage” such as dripping taps, leaking toilets and water efficiency advice on how to better use water in the home.

WA5 - Provide a free repair service for customers with a customer side leak outside of the property

2018/19	2017/18	2016/17	2015/16
7,957	4,834	2,089	1,404

During 2018/19 we offered customers significantly more free repairs than the target of 900 properties (over a 10,000-property threshold). This is predominately due to the increased volume of repair work being undertaken as part of our leakage recovery plan, where we have fixed both customer side leaks and other leaks.

WB3 – Compliance with drinking water quality

2018/19	2017/18	2016/17	2015/16
99.96%	99.96%	99.96%	99.96%

Since the change in lead standard in 2013 our performance has remained at 99.96%. Unfortunately, we are not able to eliminate all failures since a number of these are due to customer side plumbing which is outside of our control. We are continuing with our lead replacement programme and targeting mains flushing to address iron accumulation.

WB4, WB1.4 – Properties experiencing chronic low pressure (DG2)

2018/19	2017/18	2016/17	2015/16
7	6 ¹	5	0

We are pleased to report a year end figure of 7 properties, all of which are allowable exclusions for resolution under S65 of the Water Industry Act 1991. The year has not been without its challenges, with the exceptional hot, dry weather experienced in July which caused issues in some areas where historically we have not had pressure problems. We have applied our mitigating factors policy for severe weather in accordance with our outcomes reporting policy which is published on our website. During July 2018, 18,016 customers’ properties experienced low pressure in Slough, Wycombe, Aylesbury and Guildford, the majority of whom were impacted between 5 July and 17/18 July, with one area being impacted until 26 July. Of these, 14,542 satisfied the severe weather exclusion criteria. The remaining 3,474 were added to the low pressure register. These have since had operational solutions delivered and the customers are no longer suffering low pressure. Our approach was endorsed by our CCG on 1 March 2019.

¹ Restated in line with the new methodology (previously reported as 206)



In our customer research, customers have told us that they would rather we kept a larger number of customers in supply with low pressure than for some customers to have no water and some customers to have full pressure. The high number of customers experiencing low pressure in July was due in part to our deliberate strategy to keep as many customers as possible in supply during the exceptional weather event.

As we indicated that we would do in our 2017/18 Annual Return², we have reviewed our process document for this measure and a small change in methodology is being implemented relating to the validation period after a solution has been applied. In previous years the validation period, which can take up to 28 days, was included in a property's time on the low pressure register. This meant that some properties, for which a solution was applied during March, would still be reflected in the year end figure, despite the solution being in place before year end. This has been reviewed and the change is to exclude the validation period from the time on the register.

Under the historical methodology the end of year figure would be 668 properties on the low pressure register, and under the adjusted methodology it is seven properties. All solutions were applied by 21 March and were proven to be successful without further intervention in the validation period.

Retrospective application of our new methodology to our 2017/18 performance would result in the end of year figure for 2017/18 being six properties (all allowable exclusions for resolution under Section 65 of the Water Industry Act 1991), rather than the 206 properties reported in the Annual Return.

This aligns the register time with the low pressure actually being experienced by our customers and was endorsed by our CCG on 1 March 2019. This also aligns with our methodology for reporting sewer flooding where we take the data cut of flooding incidents for the period 1 April to 31 March on 1 May after the reporting year in question. This is to allow enough time for a lag in customer reports of flooding in March and to allow site investigations to progress.

The change in methodology has no impact on the WB1 Asset Health assessment of "marginal" which we are reporting this year in 2018/19. In addition, the retrospective application of the methodology would not change the 2017/18 WB1 assessment of "marginal". Therefore, the change in methodology does not result in any change to the ODI under performance payment related to WB1.

WB5 – Average hours lost per property served due to interruptions >4hrs

2018/19	2017/18	2016/17	2015/16
0.26 hours	0.21 hours	0.12 hours	0.12 hours

Our higher than usual reported numbers in 2017/18 was due to the freeze thaw event and in 2018/19 due to the exceptional hot and dry weather in July and early August 2018. Together, these

² 2017/18 Annual Return, Table 3a and 3b commentary, Section WB4, WB1.4 – Properties experiencing chronic low pressure (DG2)



two months had an impact of 0.101 average hours on the overall reported number. There were 10 capped events (where property hours exceed 20,000) in 2018/19 of which seven were in July or August. This is higher than the historical average, which is three capped events a year. Our performance results in an under-performance payment of £10.670m for this year and a projected £15.09m for the AMP.

We continue to work hard to improve our supply interruption performance through a number of operational improvements and initiatives which include:

- Recruitment of 24 additional network service technicians and a new trunk main rapid response team;
- Implementation of a supply interruptions dashboard to give management focus on performance;
- Increased investment in monitoring of our network which helps us identify how many customers may be experiencing an interruption to supply;
- Proactive contact with vulnerable customers to support them with alternative water supplies; and
- Increasing the size of pumps that our technicians carry so that live repairs can be carried out on the network and checking and installing new valves in the highest risk areas.

As part of our AMP7 business plan we have committed to a 20% improvement in supply interruptions performance by 2024/25.

WB6 – Security of Supply Index (SOSI)

2018/19	2017/18	2016/17	2015/16
98	97	99	100

Our SoSI score for the annual average and critical peak period in 2018/19 is 98. This is an improvement on the 97 reported in 2017/18, although not delivering our committed performance SoSI of 100.

The improvement in SoSI this year reflects reductions in dry year distribution input and target headroom in the London water resource zone. These are outweighed by the increase in outage allowance, the increase in climate change impact and leakage. The supply demand deficit in London WRZ was affected by the challenges with the delivery of our leakage programme due to extreme cold weather early in 2018 followed by the summer 2018 heatwave, as well as an increase in outage allowance. All other water resource zones are in surplus under both annual average and critical conditions.

The SoSI score of 98 this year results in an under-performance payment of £4.53m for the year and a projected under performance payment of £13.59m for AMP6.



WB7/SB6 - Compliance with SEMD advice notes (with or without derogation)

Water against old outputs

2018/19	2017/18	2016/17	2015/16
23%	21%	3%	1%

Water against new outputs

2018/19	2017/18	2016/17	2015/16
42%	39%	6%	1%

Waste against old outputs

2018/19	2017/18	2016/17	2015/16
28%	26%	20%	6%

Waste against new outputs

2018/19	2017/18	2016/17	2015/16
45%	42%	32%	10%

This measure has an end of AMP target and we have reported it cumulatively from the beginning of the AMP.

In our letter to you dated 31 May we said:

“In 2018 we carried out a strategic review of our SEMD programme. This showed that the scope and complexity of work required to secure the 591 outputs we had planned originally was too extensive and too complex to be delivered in a single AMP period (AMP6) or for the expected cost. Our updated target is to deliver 326 outputs, which we still consider to be challenging.

In our PR19 April Plan, we suggested a temporary approach to measuring our performance against WB7 and SB6, which involved comparing the amount of forecast expenditure on our SEMD programme with what was allowed by the FD. This approach would have required us to submit a corrigendum ahead of our annual performance reporting requirements for 2018-19.

Latest developments

Following the April 2019 submission, we have discussed our AMP6 programme with Defra and propose to amend our original PR14 forecast of outputs to be delivered from 591 to 326. This is more reflective of the efficient number of outputs that can be secured, taking account of the time and money available. Overall, the changes retain our commitment to comply with Advice Notes.

We intend to report performance for commitments WB7 and SB6 against the amended scope of 326 outputs. In the interest of transparency, we will also disclose what our performance would be against the 591 outputs originally agreed with Defra.



We have discussed this approach with Defra. In light of this discussion, we consider that adjusting the level of outputs required to deliver on our SEMD commitments is a more appropriate and consistent approach than changing the basis of the performance commitment.

Consequently, we do not consider we need to submit a corrigendum, as the number of outputs to be delivered is not formally specified in the PR14 FD, nor published elsewhere and there are no changes required to the FD description of WB7 and SB6.”

WB8 – MI/d of sites made resilient to future extreme rainfall events

2018/19	2017/18	2016/17	2015/16
747 MI/d	4 MI/d	n/a	n/a

This measure has an end of AMP target and is reported cumulatively from the beginning of the AMP. In 2018/19 we delivered protection to four sites, Waltham Abbey, Coppermills, Hornsey and Lee Bridge, equating to 743 MI/d of benefit. This is in addition to the site delivered in 2015/16 (with 4 MI/d of benefit). We have included further commentary in our reconciliation submission to explain our plan for 2019/20.

WC1 - Greenhouse gas emissions from water operations

2018/19	2017/18	2016/17	2015/16
45.7 ktCO ₂ e	46.2 ktCO ₂ e	160.7 ktCO ₂ e	284.8 ktCO ₂ e

We have continued to improve our reduction in carbon emissions since last year at 118.7ktCO₂e under our 164.4ktCO₂e target. This is primarily due to our switch to a green tariff electricity supply in October 2016.

WC2 – Leakage

2018/19	2017/18	2016/17	2015/16
690 MI/d	695 MI/d	677 MI/d	642 MI/d

We remain committed to delivering a reduction in leakage across our network and achieving our 2019/20 annual average target of 606 MI/d by 31 March 2020. Despite the challenges of last year we have held a slightly improved performance in 2018/19 of 690 MI/d, compared to our last forecast of 708 MI/d. This will result in us returning £35.1m (£35.1m is 2012/13 prices. £40.6m in 2018/19 prices) to our customers for our leakage performance this year.

Thames Water’s Board and Executive team remain committed to doing all we can to hit our target of 606 MI/d and our internal reporting uses 606 MI/d as our target performance. However, we acknowledge that this will be a significant stretch.

As a result of the material impact we know weather can have on our plans, we have developed a central plan and budget for 2019/20 that allows for one weather event (either a hotter than average



summer or a colder than average winter). Our plan includes the necessary work volumes and work mix to deliver a monthly profile to achieve our 606 MI/d annual average target.

As shared with Ofwat in March 2019, we believe the interventions we have made over the past 24 months have had a clear and positive effect on improving our leakage management processes. We can evidence an improvement in asset availability, volume of activity and speed of planning and repair. For example, we have increased our repair team numbers during 2018/19 by approximately 25 teams (which is around 14% higher than our start position for 2018/19). This has enabled us to complete more repairs than we originally planned.

These improvements provide the necessary foundations for ongoing leakage reduction. We recognise that there is still work to be done. However we believe we have a leakage ‘machine’ that is capable of not just addressing the significant natural rate of increase in leakage across our region but is also capable of driving leakage down to our 2019/20 target.

As previously included in our 1 April 2019 business plan, we have included a risk adjusted forecast of 636 MI/d for 2019/20. This is in light of the higher start point for 2019/20, and the inherent challenge in reducing leakage below our all-time lowest level and keeping it there.

WC3 - Abstraction Incentive Mechanism (AIM)

2018/19	2017/18	2016/17	2015/16
-170.69 MI/d	-1,676.29 MI/d	0 MI/d	n/a

We complied with AIM at all our sites, individually and overall. This was achieved despite a dry year in which water resources were a challenge.

WC4/SC6 - We will educate our existing and future customers

2018/19	2017/18	2016/17	2015/16
24,897	21,341	20,898	17,491

Since the beginning of the AMP we have consistently engaged more students than our target. This year we have engaged 28% more than the target of 18,000 due to a higher demand for various elements of our programme, including those delivered by our education partners.

WC5 - Deliver 100% of agreed measures to meet new environmental regulations

This is a five-year measure with a 100% target at the end of the AMP. As in previous years we have reported the in-year actuals as “not available” as the performance commitment was not designed to be reported mid-AMP. Calculating the number of sites delivered to date as a percentage is meaningless when deliverables are of different sizes and complexities and the delivery profile is not straight lined.

Schemes to be delivered are agreed with the Environment Agency and we are on track to deliver the end of AMP target. During 2016/17 we delivered 17 measures, during 2017/18, 18 measures and during 2018/19, 38 measures. In 2018/19 eel screens were delivered at Hampton, Surbiton, Hythe End and Farmoor; river restoration was delivered for Amwell Magna and investigations into the



impacts of our groundwater abstractions were completed at Hawridge for the River Chess and Bexley for the River Cray. Appraisals into the options to mitigate abstraction impact have been completed for our abstractions on the Lower River Lee and for our abstraction at Waddon which affects the River Wandle. Further information on our 2019/20 plan is included in the reconciliation commentary.

WD1 - Energy imported less energy exported

2018/19	2017/18	2016/17	2015/16
520 GWh	510 GWh	491 GWh	496 GWh

Increased customer demand for water during the sustained hot weather experienced over the summer of 2018 meant we produced up to 450 megalitres per day of extra potable water to keep our customers in supply. Pumping more water resulted in more energy consumption during this stress event and meant that our water production processes and distribution routes had to draw upon more energy intensive options. This, coupled with below average rainfall, meant that reservoir levels dropped substantially.

During the wetter winter period we made the decision to abstract more water to recover our storage levels and sustain resilience. We imported more energy to meet this requirement, which has further affected our net energy performance. Consequently, we have not met the 2018/19 target. This additional energy used to pump water into our reservoirs has helped to ensure our customers will be kept in supply going into 2019 reporting year. Further information on our 2019/20 plan is included in the reconciliation commentary.

SB3 - Properties protected from flooding due to rainfall

SB3 sets out our commitment to protecting properties from sewer flooding caused by rainfall events. We reported our performance on SB3 in preceding annual reports and our PR14 submissions as the total number of equivalent properties that our flooding programme, comprising the Counters Creek Alleviation Scheme (CCFAS) and other schemes, protects. As per SB3 as agreed at PR14, we did not report performance on CCFAS and other schemes separately. This accorded with the target of this performance commitment being set as the total number of equivalent properties protected, so independent to whether CCFAS or other schemes deliver this protection.

We proposed amending SB3 to recognise that we are not cancelling our CCFAS but are delivering it using a different mix of solutions to those envisaged at PR14.³ The need for these amendments originates from SB3, as agreed at PR14, not envisaging a scenario where in light of better evidence we identify a mix of solutions that protect customers at risk of flooding in the Counters Creek area as effectively, yet using a different mix of solutions to those funded at PR14 (which included a strategic sewer).

³ See "Counters Creek Flood Alleviation Scheme – ODI Amendment proposal", November 2018.



We proposed amending SB3 in two ways⁴:

1. Restating the performance commitment tables and incentive rates in SB3 to reflect that the automatic financial incentive that applies to other schemes is separate to CCFAS; and
2. Inserting additional wording into the SB3 'additional details' table to clarify how the CCFAS incentive works when delivered using a different mix of solutions⁵.

The first amendment was implemented by setting the target for other schemes at 668 (in number of properties). The annualised benefits associated with these 668 properties to be protected amount to £5.8m⁶. Table 1 reports our AMP6 performance on other schemes in number of equivalent properties.

2015/16	2016/17	2017/18	2018/19	2019/20	Cumulative
327	60	19	49	168	622 ⁷

Table 1: Our performance on other schemes over AMP6

Our forecast of 622 equivalent properties protected by the end of AMP6 implies that we are on track to deliver annualised benefits of £5.87m. As such, we are on track to deliver the target of £5.8m in which case neither an under-performance payment applies nor an over performance payment is available. Any payment from under- or overperformance relative to the target of £5.8m will be determined in accordance with the formulas and approach set out in our June 2014 Performance Commitment Response. We explained in this response that, whilst we defined the process for determining incentive rates ex ante, we would only determine the exact incentive rate and ODI true-up, ex post at PR19 and subject to independent assurance. This allows for ODI true-up to be based on the actual costs and benefits of the specific solutions that we implemented. We are committed to do this. That is, we will determine any under- or overperformance on other schemes in 2020/21 using the formulas from the June 2014 response and based on the actual costs and benefits associated with the solutions that we implemented. We do not report an indicative penalty or reward at this stage as there is significant uncertainty around the actual costs and benefits that should be used in this determination.

The second amendment expresses that SB3 regarding Counters Creek would be met where all properties, identified by Thames Water before 28 February 2018, to be at risk of flooding (with a high degree of confidence) in the Counters Creek area are alleviated to a 1 in 30 standard by 31 March 2020 with a mix of solutions that does not include a strategic sewer. As we are not cancelling CCFAS, and our alternative CCFAS will provide at risk properties with greater localised protection, sooner and for a lower cost than could be delivered by a strategic sewer, there should be no ODI penalty. We confirm that we are on track to provide the required protection by March 2020.

⁴ We proposed complementing these amendments by committing to fully refund our customers for the underspend that is a result of our alternative CCFAS saving a considerably amount of money (~£124m).

⁵ We refer to our ODI Amendment Proposal for more explanation and the precise wording of these amendments.

⁶ This concerns the sum of Annualised Benefits that we committed other schemes to deliver as per Table 1 in our PR14 Performance commitment response: SB3 Properties protected from flooding due to rainfall.

⁷ The cumulative forecast of 622 is determined as the sum of non-rounded performances across individual years. This explains why this forecast is 622 and not 623.



SB4 - Number of internal flooding incidents, excluding those due to overloaded sewers (SFOC)

2018/19	2017/18	2016/17	2015/16
1,032	1,062	1,214	1,403

Our performance against this measure has improved for the third year running and has improved since our April PR19 re-submission. This performance can be attributed to a greater focus on proactive preventative measures such as increased use of data insight, customer education campaigns, food service establishment visits and the tactical sewer cleaning programme and rainfall returning to average levels. These initiatives and others will continue into year five with the expectation that the forecast will be met. This year we have outperformed our target which results in an out-performance payment for 2018/19 of £2.915m which will reduce the projected net under-performance payment for the AMP period of £5.495m.

SB5 - Contributing area disconnected from combined sewers by retrofitting sustainable drainage

2018/19	2017/18	2016/17	2015/16
0	0	-	-

In our April 2019 PR19 Re-submission we had forecast seven hectares in 2018/19, the majority of which was built up from claiming part of the Battersea Nine Elms project. Battersea Nine Elms, which is still in construction, will deliver 14.355 hectares on completion. A major component of the scheme is a surface water pumping station which is substantially completed and serving part of the area (c 68%). Earlier in the year we had intended to report the benefit in 2018/19. However, given that the project is still in construction we consider it more appropriate to report the full area once all works are completed. As a result of this, our reported figure for this year differs to our forecast.

We have delivered one scheme in 2018/19 which involved a groundworks scheme at Cheeseman Road, resulting in 0.241 hectares as the total claimable area for 2018/19. Further commentary on our 2019/20 plan is included in our reconciliation submission.

SB7 - Population equivalent of sites made resilient to future extreme rainfall events

2018/19	2017/18	2016/17	2015/16
962,842	495,160	-	-

This is a five-year performance measure, which is reported cumulatively from the beginning of the AMP. The definition of our measure is the capacity (in population equivalent, PE) of wastewater treatment works where Thames Water has invested to protect supply from extreme weather events (defined as a 1:100 rainfall event), by the end of 2015-20. This will be measured by the successful delivery of the solutions to protect supply from the identified sites. PE will be measured from the design capacity of the sites.



In 2017/18 we delivered protection to sewage treatment works at Chesham and Maple Lodge and in 2018/19 to East Hyde and Rye Meads.

In the 2017/18 annual performance report we reported actual PE (including growth) rather than design capacity as stated in our PR14 submission. In our reconciliation commentary we stated the equivalent design capacity. We have now restated our 2017/18 performance as design capacity. We are now expecting a potential small under-performance payment. Further commentary is included in our reconciliation submission to explain the reason for the under-performance and the plan for 2019/20.

SB8 - Lee Tunnel including Shaft G

This scheme was delivered in 2015/16.

SB9 - Deephams Wastewater Treatment Works

This scheme was delivered in 2016/17.

SC1 - Greenhouse gas emissions from wastewater operations

2018/19	2017/18	2016/17	2015/16
230.0 ktCO ₂ e	231.7 ktCO ₂ e	346.7 ktCO ₂ e	468.5 ktCO ₂ e

We have continued to improve our reduction in carbon emissions since last year at 51.0 ktCO₂e better than our 281.0 ktCO₂e target. This is due to our switch to a green tariff electricity supply in October 2016 and through reducing emissions from sludge incineration, as we switch to advanced digestion. This helps reduce what is now the principle area of emissions for the business –from the sewage and sludge treatment process.

SC2 - Total category 1-3 pollution incidents from sewage related premises (including S105a transferred assets)⁸

2018	2017	2016	2015
295	292	315	232

Our performance in 2018 is similar to our reported figures for 2017 and is well below our target of 340. We have seen an overall reduction of pollution incidents in our infrastructure assets but there has been an increase in Category 3 pollution incidents from our treatment and pumping station assets.

There were nine serious pollution incidents in 2018. This is an improved performance compared to 2017. These are all Category 2 pollution incidents, and this is the first year of AMP6 that we have had no Category 1 pollution incidents. Three incidents are for treatment and six are network (five

⁸ This is a calendar year measure



foul sewer and one rising main). We are installing storm tank depth monitors and updating our site operating manuals as well as increasing network cleaning and providing more customer education on ‘Bin it don’t block it’, leveraging the publicity around the London fatberg.

SC3 - Sewage treatment works discharge compliance ⁷

2018/19	2017/18	2016/17	2015/16
98.85%	99.43%	98.28%	99.13%

In the first half of 2018 we had four failures at Deephams, Cholsey, Chertsey and Wolverton Townsend. As a result, we have missed our target and are returning £0.115m to customers at the end of the AMP for this year’s performance. We had no further failures during the second half of 2018 and there have been none to date in 2019.

Two of the failures were attributed to iron and as a result we have revised all our iron permits to the 95th percentile. Most of the permits have been amended with only two batches outstanding with the Environment Agency. These should be received over the next few months.

SC4 - Water bodies improved or protected from deterioration as a result of TW activities

2018/19	2017/18	2016/17	2015/16
0	0	-	-

This performance commitment has an end of AMP target. We are still expecting to deliver three out of 13 sites at end of 2019/20. Although we have delivered the activities that we planned for the remaining 10 sites it has taken longer than expected to prove the benefits. Our measure is currently based on evidencing changes in river concentrations of phosphorous which our investigations are showing can take five to 10 years to evidence.

Innovative methods to improve benefits detection are now being deployed but we are proposing to consult the CCG on a proposed change to the methodology for 2019/20 to allow waterbodies to be claimed as meeting the performance commitment where it can be demonstrated that phosphorus inputs to the watercourse in question have been reduced as result of the actions taken. This does not have any financial impact on customers and does not change the scope of work we are intending to complete as excellent work already been delivered to:

- Assess, characterise and prioritise actions in the study catchment (the Evenlode), including baseline monitoring;
- Engage with farmers and develop a viable proposition for phosphorus control;
- Achieve high rates of scheme uptake, with particularly high coverage in the highest risk areas and continuing scheme delivery across the whole catchment; and
- Have multiple approaches for controlling phosphorus under test, ranging from specialist advice, to “no-till” trials and implementing capital interventions such as improving farm tracks, building fencing to prevent livestock entering the streams and rivers and creating hard standings to reduce sediment being mobilised and entering the watercourses.



We are planning to continue our catchment work in this area into AMP7 and will continue to monitor the longer-term benefits of the work delivered to control phosphorus in AMP6.

SC5 - Satisfactory sludge disposal compliance

2018/19	2017/18	2016/17	2015/16
100%	100%	100%	100%

Our performance was reviewed by the Environment Agency on 15 March 2018, with no non-conformances against the Sludge Use in Agricultural Regulations and other codes of practice identified.

Our internal monitoring database shows no inconsistencies between the issuing of ‘recycling permits to work’ (our internal instruction to the hauliers that biosolids can be moved off our sites to farms) to hauliers and the return tickets back following the recycling of materials to land (a confirmation ticket of where the biosolids have been stockpiled and when they have been spread on a specific field).

We have continued to attain 100% certification under the industry-wide Biosolids Assurance Scheme. The purpose of the UK Biosolids Assurance Scheme is to provide food chain and consumer reassurance that Certified Biosolids can be safely and sustainably recycled to agricultural land.

SC7 - Modelled reduction in properties affected by odour

2018/19	2017/18	2016/17	2015/16
8,931	1,980	1,298	-

During 2018/19 we have completed the delivery of our AMP6 odour projects as planned, delivering odour reduction to an additional 2,338 modelled properties and earning an out-performance payment of £1.1858m. There are no further projects planned for 2019/20. Our original plan for AMP6 was to deliver odour abatement projects at Aldershot, Esher, Earlswood, Farnham and Deephams. Since changing the sludge process at Earlswood we have stopped receiving customer complaints and therefore concluded that we no longer need additional investment to reduce the level of odour from the site.

We have also delivered odour reduction projects at two additional sites, Camberley and Bicester. These sites were identified and prioritised through the use of our odour management framework and risk assessment matrix, which takes into account the number of complaints, risk of enforcement and active environmental health officer concerns. A heat map is produced which tracks emerging, increasing and decreasing risks on a site by site basis, this is reviewed monthly by our wastewater senior operations and asset management teams. Through this process both Bicester and Camberley were identified as sites requiring odour reduction measures during AMP6.



SC8 - Deliver 100% of agreed measures to meet new environmental regulations

This is a five-year measure with a 100% target at the end of the AMP. As in previous years we have reported the 2018/19 actual as “not available” as the performance commitment was never designed to be reported mid-AMP. Calculating the number of sites delivered to date as a percentage is meaningless when deliverables are of different sizes and complexities and the delivery profile is not straight lined.

We are on track to achieve our end of AMP target with all schemes due by the end of 2018/19 delivered, deferred with agreement of the Environment Agency or swapped with other NEP outputs planned for later in the period. The Environment Agency’s NEP tracker confirms this position and the schemes comprised the Beddington STW upgrade to meet the new permit limit for phosphorus, 170 Event Duration Monitoring (EDM) outputs and reported data for 25 sites as part of the Chemicals Investigation Programme (CIP).

SC9 – Reduce the amount of phosphorus entering rivers to help improve aquatic plant and wildlife

2018/19	2017/18	2016/17	2015/16
0.0	0.0	-	-

This is an end of AMP target and the current delivery plans are on track for full delivery by end of the AMP. During the 2016/17 financial year we restated the committed performance level in line with the expectations of the final NEP5 as confirmed by the Environment Agency. The final NEP5 programme of phosphorus removal from rivers equates to 59.3kg/day by March 2020. This has been confirmed in the corrigenda published on the Ofwat website on 18 May 2018.

A phased delivery approach is being taken, with all sites in at least the design phase. Good progress is being made with seven of the sites already undergoing final testing to confirm the new permit requirements are being met. A further update is provided on our 2019/20 plan in the commentary for the reconciliation submission.

SD1 - Energy imported less energy exported

2018/19	2017/18	2016/17	2015/16
396 GWh	431 GWh	477 GWh	533 GWh

We were successful in reducing our imported electricity by 25GWh compared to 2017/18, through delivery of improved efficiency, and March 2019 saw our best month of renewable generation ever. Our plans to increase our renewable generation have however delivered more slowly than expected, which has resulted in us not delivering our target.

The output from Thermal Hydrolysis Plants has continued to ramp-up more slowly than originally anticipated at Crossness and Basingstoke. During the year we have also had serious mechanical issues with the engines providing renewable generation at Crossness. These issues have



compounded the underlying issue of our higher than planned AMP6 baseline and the reduced scope of our AMP6 efficiency investment programme. However, where we have invested in our energy efficiency, we have seen success, in particular with Mogden STW achieving an improvement of over 7 GWh since the previous year. A further update on our 2019/20 programme is included in the reconciliation submission commentary.

T1A - Successful procurement of the Infrastructure Provider

This scheme was delivered in 2015/16.

T1B - Thames Water will fulfil its land related commitments in line with the TTT programme requirements

2018/19	2017/18	2016/17	2015/16
3	13	13	13

T1B is a performance commitment for Thames Water to provide access for Tideway to their construction sites. Tideway are building the tunnel and are in control of the construction programme. They have amended their programme which means that they have deferred access to five sites from the year 2018/19 to the year 2019/20.

T1C – Completion of category 2 and 3 construction works and timely availability of sites to the Infrastructure Provider

2018/19	2017/18	2016/17	2015/16
21	21	19	9

This measure has an end of AMP target and is reported cumulatively from the beginning of the AMP.

All sites due for completion in 2018/19 were completed by 2017/18. A further update on our 2019/20 plan is included in the reconciliation submission commentary.

T2 – Thames water will engage effectively with IP, and other stakeholders, both in terms of integration and assurance

A survey of relevant stakeholders on the Liaison Committee associated with the Thames Tideway Tunnel project was conducted. A significant majority have agreed that in terms of integration and assurance, and from the interviews completed so far, it indicates we will be reporting ‘effective engagement’ again this year, is in line with the current target.



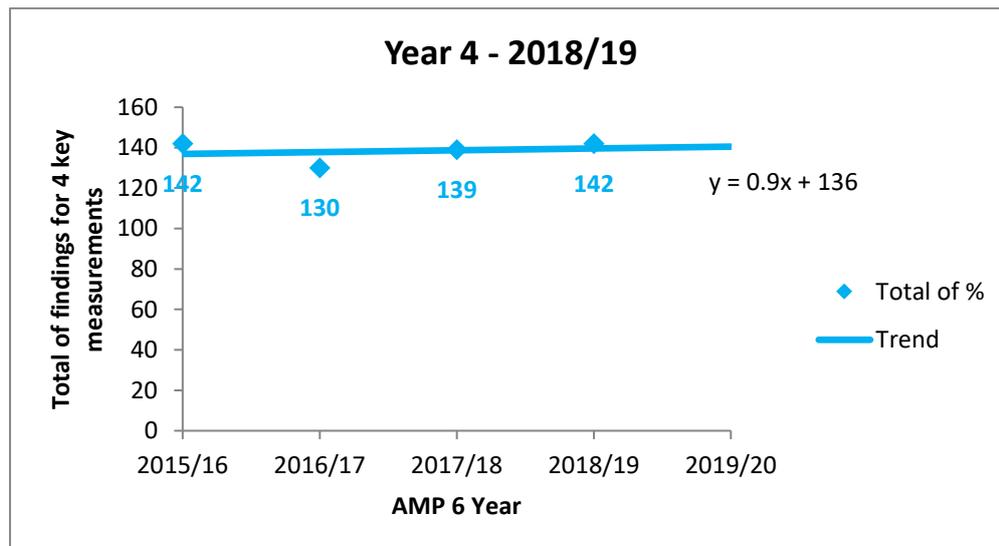
T3 - Thames Water will engage with its customers to build understanding of the Thames Tideway Tunnel project. Thames Water will liaise with the IP on its surveys of local communities

Surveys of a representative sample of our customers were conducted to measure the awareness and understanding of the Thames Tideway Tunnel project and its benefits.

The following scores were received during 2018/19:

- Household awareness: 41%;
- Household composite understanding: 35%;
- Non-household awareness: 37%; and
- Non-household composite understanding: 29%.

When compiled and assessed against previous AMP6 scores these equate to a small 'Improving trend' to date within AMP6. We are currently consulting our Customer Challenge Group (CCG) on a potential change to the methodology for 2019/20.





RA1 – Written complaints received from household customers (relating to charging and billing)

2018/19	2017/18	2016/17	2015/16
18	17	19	14

SA2 – Written complaints received from household customers (relating to wastewater)

2018/19	2017/18	2016/17	2015/16
5.34	4.39	6.21	6.46

WA2 – Written complaints received from household customers (relating to water services)

2018/19	2017/18	2016/17	2015/16
18.61	12.39	9.12	8.84

RA2 – Improve handling of written complaints by increasing first time resolution (relating to charging and billing)

2018/19	2017/18	2016/17	2015/16
88%	95%	94%	92%

SA1– Improve handling of written complaints by increasing first time resolution (relating to wastewater)

2018/19	2017/18	2016/17	2015/16
84%	94%	93%	87%

WA1 – Improve handling of written complaints by increasing first time resolution (relating to water services)

2018/19	2017/18	2016/17	2015/16
88%	96%	96%	91%

Our performance in complaints and complaints resolution during the year was severely affected by the knock-on impact of ‘freeze thaw’ at the end of 2017/18, which affected c72,000 customers and led to a 94% increase in ‘no water’ and low-pressure complaints. Performance was also affected by the joint hottest summer on record.

During the ‘freeze thaw’ incident we diverted resources to dealing with the customer queries relating to the extreme weather and to getting customers back in supply as soon as possible. Our focus on responding to the ‘freeze thaw’ incident and ensuring customers received compensation resulted in a backlog of work, leading to an increase in the time it took us to respond to non-weather



related enquiries. Our ability to recover from this, and resolve outstanding work was limited due to the focus on keeping customers in supply during the prolonged summer.

We're applying some important learning from the impact of 'freeze thaw' and the heatwave to increase the resilience of our service to extreme weather events and reduce knock-on impact to our day-to-day service provision. We've put in place a new Quality Assurance framework, to ensure we fix things first time; invested in a greater number of agents to support during peak call times and introduced dedicated case management to support customers through more complex wastewater problems.

RA4 – Improved customer satisfaction of Retail customers (operations contact centre)

2018/19	2017/18	2016/17	2015/16
4.44	4.43	4.46	4.27

SA3 – Improved customer satisfaction of Retail customers (wastewater)

2018/19	2017/18	2016/17	2015/16
4.58	4.55	4.57	4.50

WA3 – Improved customer satisfaction of Retail customers (Water services)

2018/19	2017/18	2016/17	2015/16
4.39	4.42	4.50	4.44

As with complaints, our customer satisfaction scores were adversely affected by the need to divert all resources to dealing with the weather events of 2018. This had an impact on our day-to-day handling of calls and ability to carry out day-to-day maintenance and repair.

Performance started to recover in the second half of the year due to a much more proactive approach to communication with customers. Work continues to improve attendance and cycle times, focusing on productivity and performance of our technicians and repair and maintenance teams. However, this was not sufficient to achieve our target level of service for the year.

RA3 – Improved customer satisfaction of Retail customers (charging and billing)

2018/19	2017/18	2016/17	2015/16
4.58	4.66	4.63	4.61

Customer satisfaction for charging and billing services remained consistent throughout the year with the year-end performance of 4.58 narrowly missing our target of 4.60.

RA5 – Number of bills based on actual meter reads

2018/19	2017/18	2016/17	2015/16
99%	97%	97%	91%

Improved processes to drive more actual meter reads and working closely with the wider business has seen us exceed the result from last year.

RC1 – Increase the number of customers on a payment plan

2018/19	2017/18	2016/17	2015/16
58%	58%	55%	54%

We continue to exceed target for this measure and offer a wide range of payment options for customers. During the year we welcomed 75,000 customers who were previously billed through Local Authority Housing Associations. This increased our customer base therefore reducing the percentage of customers on direct-debit plans. If excluded, the number of customers on a payment plan would be 59.24%.

RC2 – Increase cash collection rates

2018/19	2017/18	2016/17	2015/16
87.9%	89.2%	87.9%	88.2%

This year we saw an increase in the number of customers switching to a metered account which meant that they were billed later at year end and we have yet to collect the cash from these customers. We have therefore seen a small decrease in this performance measure, but we expect to collect this cash in the next few months.

RB1 – Implement online account management

2018/19	2017/18	2016/17	2015/16
New online self-serve channel	New online self-serve channel	Limited online	Limited online

Following implementation in 2015/16, we continue to maintain our online account management tool.

RA6 – Service incentive mechanism

2018/19	2017/18	2016/17	2015/16
75.0	78.4	77.3	76.7



Our Service Incentive Mechanism score of 75 out of 100 for 2018/19 is made up of a customer satisfaction score (75%) and quantitative measures (25%). The quantitative measure includes performance in unwanted calls, written complaints and second stage written complaints, with our complaints performance during the year being severely impacted by extreme weather events (see RA1, SA2 and WA2 above). We are committed to improving our service to customers with complaints reduction being one of our key priorities for 2019/20. We have invested in a new customer relationship management and billing platform and have started to transition customers. We're also undertaking a major update to our website and continuing with our customer engagement programme to ensure we are focusing on what matters most. The revenue adjustment for SIM performance has been calculated at £91.4m (2012/13 prices), based on our understanding of the current methodology.



4.0 Table 3B – Asset Health

Table 3b requests us to report performance against a committed performance level which relates to the reference level.

Each of our asset health indicators is calculated in accordance with our AMP6 Outcomes reporting policy – Annex 1 that is published on our company website. For each measure we have defined a:

- Reference level – this is the target level for the sub-measure as defined in the PR14 determination;
- Control limit – this provides a deadband for performance for the sub-measure, similar to the use of upper control limits for serviceability in AMP5; and
- Failure threshold – in line with our PR14 business plan proposals, where we stated that a “significant failure of one sub-measure would result in a movement from stable to marginal status”, we have set this threshold to identify a significant failure for each sub-measure.

Our composite asset health assessment for each indicator is based on a matrix which includes the number of sub-measures above the failure threshold vs the number of sub-measures above the control limit and below the failure threshold (see figures 1-3 below⁹).

		Number of sub-measures above Failure Threshold						
		0	1	2	3	4	5	6
Number of sub-measures above Control Limit, below Failure Threshold	0	Stable	Marginal	Marginal	Deteriorating			
	1	Stable	Marginal	Deteriorating				
	2	Marginal	Deteriorating					
	3	Marginal	Deteriorating					
	4	Deteriorating						
	5	Deteriorating						
	6	Deteriorating						

Figure 1 –Asset Health assessment matrix (water infrastructure and non-infrastructure)

⁹ Source: Thames Water, AMP6 Outcomes Reporting Policy, Annex 1 – Wholesale Performance Commitments March 2015

		Number of sub-measures above Failure Threshold			
		0	1	2	3
Number of sub-measures above Control Limit, below Failure Threshold	0	Stable	Marginal	Deteriorating	Deteriorating
	1	Stable	Marginal	Deteriorating	
	2	Marginal	Deteriorating		
	3	Deteriorating			

Figure 2: Asset Health assessment matrix - Wastewater Non-Infrastructure

		Number of sub-measures above Failure Threshold				
		0	1	2	3	4
Number of sub-measures above Control Limit, below Failure Threshold	0	Stable	Marginal	Deteriorating	Deteriorating	Deteriorating
	1	Stable	Marginal	Deteriorating	Deteriorating	
	2	Marginal	Deteriorating	Deteriorating		
	3	Deteriorating	Deteriorating			
	4	Deteriorating				

Figure 3: Asset Health assessment matrix - Wastewater Infrastructure

WB1 – Asset Health Water Infrastructure

2018/19 **2017/18** **2016/17** **2015/16**
Marginal **Marginal** **Marginal** **Marginal**

Our performance of marginal has been triggered by out interruptions to supply performance.

Sub-measure	Below reference level	Below control limit	Below failure threshold	Above failure threshold
Total bursts		✓		
Interruptions to supply > 12 hours				✓
Iron mean zonal compliance	✓			
Inadequate pressure	✓			
Planned network rehabilitation	✓			
Customer complaints discolouration/ white water	✓			

WB1.1 – Total bursts

The number of bursts is higher than last year due to the backlog of repairs from the freeze thaw event in February and March 2018 plus increased bursts failures due to the exceptional hot and dry



weather in July and early August. We repaired over 900 more visible bursts than in 2017/18. We also proactively repaired more than 900 'hidden' bursts than last year as a result of our efforts to drive down leakage, as part of our leakage recovery plan.

WB1.2 – Unplanned interruptions to customer >12 hours

The exceptional hot and dry weather in July and early August had a significant impact on this measure with these two months contributing 8,188 (50% of the 16,418 total) properties.

There were four significant events (>1,000 properties) during the 2018/19 year: Stanstead Road, SE23 (May, 1,110 properties); Longlands Reservoir, GL55 (August, 1,442 properties); Hackpen Reservoir, OX12 (August, 1,062 properties); and Rye Hill Park, SE15 (September, 1,013 properties). During the year we have implemented a number of improvements which are described in WB5.

WB1.3 – Iron mean zonal compliance

Performance for this measure is at the reference level and reflects the number of iron exceedances (12 out of 8925 samples) from the Company statutory monitoring programme. Our performance this year has been impacted by two failures in the Chinnor Water supply zone which originated from the Chinnor Water treatment works which has now been taken out of supply and the from the Crookley Green Water Supply Zone. We continue to flush mains to mitigate the risk of iron failures and have increased significantly the amount of flushing we are undertaking in 2019.

WB1.4 – Interruptions to supply greater than 12 hours

See commentary for WB5.

WB1.5 – Planned network rehabilitation

This is a five-year measure with a cumulative delivery of 650km at the end of the AMP. The delivery profile for years 1-4 is set out in Table 2 below.

PC / sub-measure	2015/16	2016/17	2017/18	2018/19
Planned network rehabilitation (kilometres)	66.46	103.28	142.75	172.34
Planned network rehabilitation (kilometres) cumulative	66.46	169.74	312.49	484.83

Table 2 – WB1.5 AMP6 performance to date

WB1.6 – Customer complaints discolouration white water

Performance is in line with previous years.



WB2 – Asset Health Water Non-Infrastructure

2018/19 **2017/18** **2016/17** **2015/16**
Stable **Stable** **Stable** **Stable**

Sub-measure	Below reference level	Below control limit	Below failure threshold	Above failure threshold
Disinfection index (DWI) (%)	✓			
Service reservoir coliform non-compliance (%)	✓			
DWQ compliance measures - turbidity (nr of sites)	✓			
Process control index (%)	✓			
DWQ compliance measures - Enforcement actions (nr)	✓			
Water quality complaints for chlorine (nr per 1,000 population)	✓			

WB2.1 – Disinfection index (DWI)

Performance has improved to 99.99 during 2018 compared to 99.96 during 2017 for disinfection index. This is largely due to less failures for coliform and turbidity at treatment works when compared to 2017.

WB2.2 – Reservoir integrity index

All service reservoirs were compliant with this measure showing continued good practice.

The number of breaches encountered at Service Reservoirs continues to reduce with seven failures in 2018 compared to 11 in 2017, 17 in 2016 and 24 in 2015.

WB2.3 – DWQ compliance measure – turbidity

There are no water treatment works breaching the turbidity (95th percentile >0.5 NTU). This is an improvement from 2017 in which one works was in breach.

WB2.4 – Process control index

Our process control index is 100% which represents an excellent level of performance.

WB2.5 – DWQ compliance measure enforcement actions

There were no enforcement orders during 2018. However, during 2019 there will be one enforcement order due to a recent prosecution relating to events from 2017 which will be reported in the next period.



WB2.6 – Water quality complaints for chlorine

Performance is in line with previous years.

WB2.7 – Water quality complaints for monitored complaints for hardness

Performance is in line with previous years. Note, this measure has a very small number of complaints.

SB1 – Asset Health Waste Non-Infrastructure

2018/19	2017/18	2016/17	2015/16
Stable	Stable	Stable	Stable

All measures are below the control limit and therefore the performance is stable.

Sub-measure	Below reference level	Below control limit	Below failure threshold	Above failure threshold
STW discharges failing numeric consents (%)		✓		
Total population equivalent served by STW failing look up table consents (%)		✓		
Unconsented pollution incidents from STW, storm tanks, pumping stations and other sewage-related premises (water incidents)		✓		

SB1.1 – Unconsented pollution incidents

As reported under SC2 there has been an increase in the number of pollution incidents from sewage treatment works. As a result, all pollutions are investigated and reviewed by senior management. These reviews have led to an increase in learning and actions that are rolled out across the business to prevent a reoccurrence of the incident at the site in question, or any other site across the Thames Water area.

Some examples are:

- Depth monitors are being installed in storm tanks at 212 sites following increases in discharges;
- Site operating manuals are being updated to ensure all knowledge of sites is documented fully;
- All temporary back-up generators are now being tested on full load every three months;
- Power spikes and outage is being analysed and tracked;
- Following a serious pollution incident at Marsh Gibbon STW caused by overgrown vegetation on the filter beds preventing filter arm rotation, a project has been created to investigate the best method to ensure filter beds remain clear;



- Increased weather planning to ensure sites have advanced notice of named storms and can put in place preventative action to ensure all assets are in service and the site monitored during the storm; and
- Increased communication between network and site teams to ensure blockage clearance/cleaning in the network does not cause problems at the site. In some cases, the cleaning may be deferred until the risk at the sewage treatment works is low.

SB1.2 – Sewage treatment discharges failing numeric consents

See commentary for SC3.

SB1.3 – Total population equivalent service by sewage treatment works failing look-up table consents

In 2018 we had one site fail against this measure (Wolverton Townsend). Due to the very small size of the site its population equivalent has an impact of just 0.0001%. However, as we only report to two decimal places performance against this measure is recorded as 0.00% but flagged as “no” against achieving the committed performance level.

SB2 – Asset Health Waste Infrastructure

2018/19 **2017/18** **2016/17** **2015/16**
Stable **Stable** **Stable** **Stable**

Sub-measure	Below reference level	Below control limit	Below failure threshold	Above failure threshold
Properties internally flooded due to SFOC (nr)	✓			
Unconsented pollution incidents from foul sewers, combined sewer overflows and rising mains (category 1 to 3 water incidents)	✓			
Number of sewer blockages (nr)	✓			
Number of sewer collapses (nr)	✓			

We have achieved the committed performance level for all sub-measures and therefore our performance is stable. During the year we have improved our data capture process to undertake more on-site validation to determine whether a problem with a sewer is a blockage or a collapse. This has resulted in some problems which we would have previously reported as a collapse now being reported as a blockage.

SB2.1 – Number of sewer collapses

Although we fixed slightly more collapses (365) than last year our performance is well below our assumed level of 736 and our latest forecast in the April submission.



SB2.2 – Number of sewer blockages

Sewer blockages have increased from 77,402 in 2017/18 to 79,702 in 2018/19. This is primarily due to a series of wet weather events in April to early June causing short term responses in the network and higher blockage discovery, and an increase in blockage clearances in September to November as material deposited and built up during the long dry summer then caused blockages as flows increased in the wetter autumn months.

SB2.3 – Pollution incidents (cat 1-3)

We have achieved an 18% reduction in network pollution incidents as a result of:

- Installing approximately 1000 sewer depth monitors during 2018, which give an indication of where blockages are in the network and allow us to act before a pollution can occur;
- Increased network cleaning and CCTV surveys, with over 600km of sewer completed in 2018/19; and
- Creating a new piece of software capable of comparing all available pollution, blockage, and flooding data to predict where potential hotspot areas are and take appropriate interventions.

SB2.4 – Properties internally flooded

Our performance is in line with previous years.